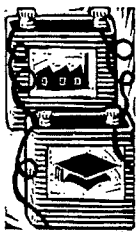
Collaboration between industry and academia is gathering pace in Canada, says **Bernard Simon** in the second of a series on research

Opportunity knocks



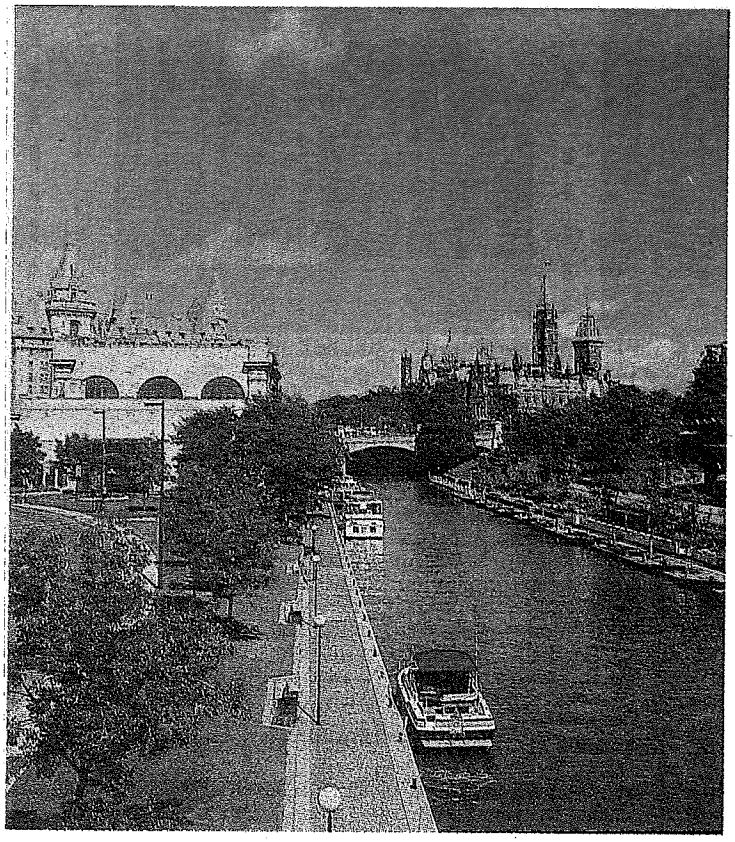
When Union Bank of Switzerland, the Japanese government, British Nuclear Fuels and Caterpillar, the US construction machinery maker, were looking for a fast and versatile data search and retrieval system, they turned to a small company in Waterloo, Ontario.

Open Text Corporation's software can search 60m words a second in any language and in any database. Its system helps Caterpillar's customer-support staff around the world, including Japan, keep abreast of changes in maintenance procedures. Writers of Caterpillar product manuals can be sure of updating every reference to a component whenever a supplier modifies a specification.

Open Text, which has been profitable for the past three years and expects 1994 sales to top C$3m (£1.4m), is a rare example in Canada of a successful business nurtured by university research and a dollop of government money. The company has its origins in work done by two University of Waterloo scientists for the computerisation of the Oxford English Dictionary in the mid-1980s. An Ontario provincial agency put up seed money to help commercialise the software.

While success stories such as Open Text remain the exception rather than the rule, there is growing collaboration between business, government and academia to apply the fruits of research to commerce and industry. Henri Rothschild, chief scientist in the Department of Industry, Science and Technology in Ottawa, says that "science policy is now considered an integral component of industrial policy. It's not a peripheral issue."

Canada's research effort remains hobbled, however, by the dominant role of government laboratories and by a lop-sided allocation of private-sector resources. According to Statistics Canada, the federal government's 200 laboratories for research and development will account for almost one-third of all R&D spending, totalling C$11bn, in the year to March 31 1994. The research budgets of some agencies, such as the National Research Council and the Department of Agriculture, match the combined resources of all Canada's universities.



Ottawa, Ontario: government laboratories dominate in Canada

By common consent, the government gets poor value for money from its in-house laboratories. They have little incentive to compete for funding or for the best brains. Private-sector researchers can only marvel at the bureaucrats' success at beating off every attempt to scale back or privatise government research facilities.

Outside Ottawa, almost half all industrial R&D is handled by 25 enterprises, led by Bell-Northern Research, the research arm of Bell Canada, the country's biggest telephone company, and Northern Telecom, the telecoms equipment maker. The 25 top spenders include three government-owned corporations.

Industry, however, is starting to take research more seriously and to collaborate with universities and government. Much of the impetus has come from trade liberalisation, especially the 1989 US-Canada free trade agreement. For years, high tariff walls shielded Canadian "branch plants" from international competition, rewarding second-hand technology (usually imported from US parent companies) and discouraging innovative research.

One recent business initiative involved a C$700,000 gift by Canadian Imperial Bank of Commerce to the University of Waterloo to set up a centre for the management of technological change and innovation. The bank has retained Douglas Wright, a former president of the university, for advice on how to adapt banking practices to research-based companies.

The University of Waterloo is leading the way in fostering collaboration between academia and business. It claims to have the world's biggest "co-operative education" programme, in which some 10,000 students spend part of their courses gaining practical experience with 2,500 employers, including several Japanese companies.

John Branch, Open Text's president, ascribes the company's existence to a university policy, unique in Canada, of allowing staff members to retain legal ownership of their research: "They tend to keep their ear to the market place more closely than those who are just working on a research project."

Research on the Waterloo campus has so far spawned 19 companies, including Open Text. One spin-off venture designs and makes seat supports for the disabled, another produces high-performance image sensors and a third makes instruments to measure the computer-controlled drying of grains.

Another closely-watched experiment in collaborative research involves seven so-called Centres of Excellence which were set up by the Ontario provincial government in 1987. Each centre is organised as a non-profit company, with equal representation from business and academia on its board. Industry nominees comprise a majority of the centre's advisory committee, which approves research projects.

The seven centres, whose work ranges from groundwater and manufacturing processes, to space and mapping science, and laser technology, were the winners of an open competition. Some 40 proposals were judged by a panel of independent researchers, including several from outside Canada.

The centres started with a C$204m grant from the Ontario government, spread over five years. The government chipped in another C$180m last year to keep the programme going until 1997.

Thanks to the centres, about 2,000 postgraduate students have been able to work with some of the country's top researchers on industry-directed projects. The vice-president for finance at the space and terrestrial science centre has teamed up with one of the scientists to form a company. The groundwater centre has licensed production of its software programmes.

When the independent judges returned for a five-year review in 1992, several of the centres got rave reviews. Especially encouraging is that the private sector's financial contribution has jumped from zero in 1987 to between 30 and 50 per cent of the centres' current budgets.

OPEN TEXT
CORPORATION

February 15, 1994
Press Release

OPEN TEXT CORPORATION AUTOMATES CUSTOMER SUPPORT FOR BLUE CROSS/BLUE SHIELD OF OREGON

Toronto — February 15, 1994 — Open Text Corporation today announced that the Blue Cross/Blue Shield of Oregon (BCBSO) has selected Open Text's text retrieval system for the management of text data relating to policy and procedure manuals, claim processing guidelines, and contracts and booklets. By installing the Open Text system, BCBSO will have placed text based corporate data "at the fingertips" of their customer service function and improved accuracy and speed in processing clients' claims.

Mr. Paul Barnes, Assistant Vice-President of BCBSO, stated that "Open Text was selected due to their product's flexibility, speed of retrieval, and cost effectiveness. The ability to provide access from IBM mainframe, Unix, and PC-based computers was essential considering our diverse environment. We also appreciated the level of support received from Open Text and enjoyed working with people at all levels in the organization."

Mr. Mike Farrell, Open Text's Executive Vice-President added "We are pleased to be associated with BCBSO and to have the opportunity to work with them in providing improved information management to BCBSO clients and employees. The experience we gain in this project will enhance our ability to offer other insurance/health sector companies state-of-the-art solutions."

Open Text Corporation, a privately held company founded in 1991, markets and distributes next generation text management software. In its short history, Open Text has established an international base of 2,500 users in numerous commercial document management applications ranging from pharmaceutical to manufacturing and financial services. The first commercial application of the technology was the automation of the Oxford English Dictionary for the Oxford University Press. Open Text's products were developed under a multi-million dollar research program at the prestigious University of Waterloo in Ontario, Canada. The architecture of Open Text's software supports structured text including native SGML. Open Text offers PAT™, a text retrieval tool, and LECTOR™, a display module which provides real-time "WYSIWYG"-style on-line browsing, navigation, and hypertext facilities.

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OPEN TEXT
CORPORATION

January 21, 1994
Press Release

OPEN TEXT AND BOOZ ALLEN ANNOUNCE A $1 MILLION ALLIANCE

Waterloo, Ontario, Canada — January 21, 1994 — Open Text Corporation and Booz Allen & Hamilton today announced an alliance that will generate revenue of over $1 million to Open Text, a privately held Canadian software company. Booz Allen & Hamilton, a well-known U.S. information services business company, incorporated the Open Text text retrieval engine into its Minerva product.

Booz Allen has developed Minerva, an innovative information integration software application that enables an organization to manage heterogeneous, distributed data resources. With the assistance of Minerva, a company can tie together diverse information resources, perform smart searches which rank-order the most relevant data, and visually display the results in a manner that aids and simplifies decision-making processes.

Larry Wright, Vice-President of Booz Allen & Hamilton, stated that "Open Text was a key component of our next-generation information delivery system. We assessed a range of technologies and selected Open Text as the best, but moreover, we found we were able to work with people at all levels in the organization, receiving the support that we needed for this strategic project."

Mike Farrell, Open Text's Executive Vice-President, also spoke positively of the project and alliance when he stated "Booz Allen & Hamilton is a first rate company, and we are delighted to work closely with them. The Minerva product is especially exciting, and we are proud to have been selected for this innovative project."

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Founded in 1914, Booz Allen & Hamilton is one of the world's largest management and technology consulting firms. Today, Booz Allen provides services in strategy, operations, systems, and technology to clients in more than 20 specialized industry sectors. Booz Allen's clients include most of the world's largest industrial companies and financial services firms, the departments and agencies of the U.S. federal government, and major institutions and government bodies around the world.

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OPEN TEXT
CORPORATION

February 3, 1994

OPEN TEXT CORPORATION AND UDMS ANNOUNCE COLLABORATION

Open Text Corporation and UDMS (Universal Document Management Systems Inc.) today announced an OEM agreement. UDMS will incorporate the Open Text engine into its document management system.

Mike Farrell, Executive Vice-President of Open Text, summarized the project's value to the company "UDMS Inc. provides document management systems to a wide range of clients who will now become exposed to Open Text. This means potentially large growth in our customer base with limited effect on the company's resources."

Mr. Jay Hilnbrand, President of UDMS Inc. stated "We enjoyed working with Open Text. The technology is well-suited to integration projects, and the technical support was great. Our clients will benefit from the inclusion of a text retrieval engine into the document management system."

Open Text Corporation, a privately held company founded in 1991, markets and distributes next generation text management software. In its short history, Open Text has established an international base of 2,500 users in numerous commercial document management applications ranging from pharmaceutical to manufacturing and financial services. The first commercial application of the technology was the automation of the Oxford English Dictionary for the Oxford University Press. Open Text's products were developed under a multi-million dollar research program at the prestigious University of Waterloo in Ontario, Canada. The architecture of Open Text's software supports structured text including native SGML. Open Text offers PAT™, a text retrieval tool, and LECTOR™, a display module which provides real-time "WYSIWYG"-style on-line browsing, navigation, and hypertext facilities.

UDMS Inc. is a ...

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OPEN TEXT
CORPORATION

February 1, 1994

OPEN TEXT CORPORATION ANNOUNCES Z39.50 MODULE

Open Text Corporation today announced a module which supports the ANSI Z39.50 standard, and the parallel standard ISO 10162/10163, which specify application protocols for information retrieval.

The parallel protocols were developed initially for use by the library community to support remote client/server access to bibliographic databases. They are now coming into general use for information and document retrieval; including in particular full-text databases. Other applications are in image servers, WAIS, campus-wide information systems, and a variety of CD-ROM publications.

Mike Farrell, Executive Vice-President of Open Text, summarized the project's value to the company "Our support for Z39.50 opens up a wide variety of markets, obviously in the bibliographic database market, but to a wide variety of other users who simply want a standardized way to do client/server information retrieval. Z39.50 is already widespread on the Internet, and clearly will be part of the infrastructure supporting the much-discussed `information superhighway'.

"But perhaps most important, our support for Z39.50 demonstrates once again Open Text's willingness to seek out and conform to industry standards. This not only serves the needs of our users, but allows us to compete in the marketplace on the basis of performance, flexibility, and product quality; areas where Open Text can dominate and win."

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OPEN TEXT
CORPORATION

OPEN TEXT AND UNIVERSITY OF VIRGINIA LAUNCH LITERARY SERVICE VIA INTERNET

Waterloo, Ontario Canada - February 18, 1994 — Open Text Corporation and the Alderman Library at the University of Virginia today announced that access to a collection of literary texts will be offered via the Internet.

Focusing initially on the *Middle English Text Collection*, the Revised Standard and King James Versions of the Bible, and Richard W. Bailey's *Michigan Early Modern English Materials* (UMI, 1975), the service will allow users to interact with Open Text's PATMotif graphical interface and the University of Virginia's vt100 client.

In announcing the venture, Open Text's Executive Vice President, Michael Farrell, said "This is an important first step in presenting, across a wide network, the extraordinary possibilities offered by the combination of Open Text's power and flexibility and text resources of great value to researchers. We commend the University of Virginia for its leadership in this area. The University offers an outstanding service to its faculty and student body — a service which should certainly be replicated in other universities".

These Internet-accessible texts form part of a collection of full-text databases, administered by the Library's Electronic Text Center (804-924-3230). The Center provides training in the creation and use of electronic texts, and makes available related research and pedagogical tools.

Speaking for the University of Virginia, Systems Librarian, John Price-Wilkin said "Our work in making available leading edge tools together with critical learning resources is receiving increasing attention. We believe that this service will show others how knowledge can now be more readily accessed and educational levels improved".

Open Text software, originally developed for the second edition of the Oxford English Dictionary, has established a leadership position in American universities, in providing state-of-the-art access to textual resources. Licensees include many significant institutions of higher learning including Columbia University, Dartmouth College, Univeristy of Michigan, University of Pennsylvania, Princeton University, and Stanford Medical Center.

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